

BEST AVAILABLE COPY**REMARKS**

This paper is being filed in response to the Office Action mailed February 18, 2004.

Claims 1-13 are pending. Claims 1, 11 and 13 have been amended.

A "Request For Extension Of Time" for extending the due date for responding to the Office Action by one month and a credit card payment form (PTO-2038) to cover the fee payment for the extension (\$110) are being filed with this Amendment. Authorization is granted to charge our deposit account no. 18-1644 for any additional fees necessary for entry of this Amendment.

The Examiner has rejected applicant's claims 1, 2, 5, 6 and 10-12 under 35 U.S.C. § 102(b) as being anticipated by Inoue et al. (U.S. Patent No. 5,430,375). The Examiner has rejected applicant's claims 8 and 13 under 35 U.S.C. § 103(a) as being unpatentable over the Inoue et al. patent in view of Hamada et al. (U.S. Patent No. 6,226,459). The Examiner has indicated that claims 3, 4, 7 and 9 would be allowable if rewritten to include all the limitations of the base claim and any intervening claims.

Applicant has amended independent claims 1, 11 and 13, and with respect to such claims, as amended, and their respective dependent claims, the Examiner's rejections are respectfully traversed. Applicant's independent claims have been amended to further clarify the present invention. Particularly, claims 1, 11 and 13, which are directed to a position detecting apparatus and method and an image reading apparatus, respectively, now recite that the plurality of phase converted signals generated by a phase converting unit, or generated during a second step of generating a plurality of phase converted signals, are generated from the plurality of position detecting signals which have different phases respectively that change periodically

BEST AVAILABLE COPY

according to a movement of the object. Each claim further recites that the phase converting unit generates a plurality of phase converted signals by giving each predetermined phase difference to the plurality of position detecting signals. Claims 1, 11 and 13 have been further amended to recite that second position data is obtained corresponding to a position of the object on the basis of the plurality of phase converted signals generated by the phase converting unit (or generated in the second step).

In the present invention, as shown in Fig. 3, two phases of position detecting signals (such as SIN and COS shown in Fig. 5) are outputted from an MR sensor 2a according to a position of focus lens 1, amplified and converted to digital signals. The two phases of digital position detecting signals are given gain adjustment and offset adjustment by gain and offset adjusting section 6. After the section 6, portions of the two phases are passed along a first path to the primary position calculating section 7 which shifts the signal component of the selected phase by a gain of the signal component that is assumed beforehand. Other portions of the two phases are passed along a second path to a phase converting section 8 which outputs phase converted signals with different phases respectively from the two phases by giving each a predetermined phase difference. A secondary position calculating section 9 then operates on the outputs of the phase converting section 8.

Applicant submits that the Inoue et al. patent fails to teach or suggest such a construction. In particular, the Inoue et al. patent fails to teach or suggest the phase converting unit and secondary position calculating section as claimed by applicant.

According to the Examiner, Inoue et al. teach a position detecting method or apparatus including "a position sensor (MR element 22, fig. 1) that outputs a plurality position detecting

BEST AVAILABLE COPY

signals which have different phases respectively that change periodically according to a movement of the object (three phase position variation, fig. 5, col. 4, ln. 11-16; a phase converting unit... (magnetic detection elements A1, A2, B1, B2, C1, C2, fig. 5) that generates a plurality of phase converted signals (position detection signals SA, SB and SC, fig. 11) which have different phases respectively by giving each predetermined phase difference to the plurality of position detecting signals (col. 6, ln. 17-19)."

Applicant respectfully disagrees. It is evident from the passages of the Inoue, et al. patent cited by the Examiner, i.e., col. 4, ln. 11-16, and col. 6, ln. 17-19, that the magnetic detection elements A1, A2, B1, B2, C1, C2 are part of the magnetic sensor MR 22 and that it is these elements of the sensor that output for the sensor the plurality of position detecting signals SA, SB, SC which have different phases respectively that change periodically according to the movement of the object.

The magnetic detection elements in the Inoue et al. patent thus only act to output a plurality of position detecting signals with different phases. They do not act as a phase converting unit that generates a plurality of phase converted signals by giving each predetermined phase difference to a plurality of position detecting signals. Moreover, in the Inoue et al. patent, it is the position detecting signals SA, SB, SC from the sensor MR 22 that are operated on by the comparators 35, 36, and 37. Thus, the comparators do not act as a second calculating unit (or fourth step) for obtaining second position data on the basis of a plurality of phase converted signals generated by a phase converting unit (or generated in a second step).

Applicant's amended independent claims 1, 11 and 13, and their respective dependent

BEST AVAILABLE COPY

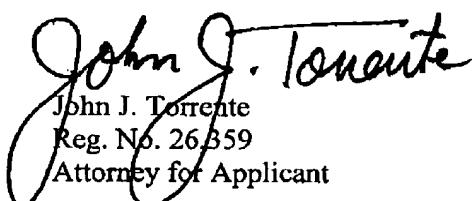
claims, all of which recites such features, thus patentably distinguish over the Inoue, et al. patent. The cited Hamada et al. patent adds nothing to change this conclusion.

In view of the above, it is submitted that applicant's, as amended, patentably distinguish over the cited art of record. Accordingly, reconsideration of the claims is respectfully requested. If the Examiner believes that an interview would expedite consideration of this Amendment or of the application, a request is made that the Examiner telephone applicant's counsel at (212) 682-9640.

Dated: June 18, 2004

Respectfully submitted,

Robin, Blecker & Daley
330 Madison Avenue
New York, NY 10017
(212) 682-9640


John J. Torrente
Reg. No. 26,359
Attorney for Applicant